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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/730,805

12/09/2003

Andrew D. Park

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CHARLOTTE, NC 28210

EXAMINER

RUDDOCK, ULA CORINNA

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

02/24/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/730,805	<b>Applicant(s)</b> PARK ET AL.	
	<b>Examiner</b> Ula C. Ruddock	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7,9,10,13,15-17 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9,10,13,15-17,20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The Examiner has carefully considered Applicant's amendments and accompanying remarks filed November 10, 2008. In view of Applicant's response, the 112, 2<sup>nd</sup> paragraph rejection set forth in the previous action has been withdrawn.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

3. Claims 1-5, 7, 9, 10, 13, 15, 16, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 5,632,288) in view of Dickson (US 2004/0216595). Park (US 5,635,288) discloses ballistic resistant composite for hard-armor applications comprising a rigid plate and a ballistic laminate structure supported by the plate. The laminate structure includes first and second arrays of high performance, unidirectionally-oriented fiber bundles (abstract). The bundles include fibers chosen from the group consisting of aramid fiber and ultra high molecular weight polyethylene (col 3, ln 26-31). The fibers have a tensile strength greater than 7 grams per denier (col 1, ln 45-47). The rigid plate can be graphite (col 3, ln 40-43). An adhesive material is provided for adhering the ballistic laminate to the plate means, preferably an epoxy resin (col 3, ln 47-50). In a preferred embodiment, a Kevlar fiber can be 1.5 denier per filament (col 5, ln 48-49). The rigid plate may be flat or contoured depending upon the particular end use (col 7, ln 23). Park discloses the claimed invention except for the teaching that the composite comprises a ballistic fabric backing and that the rigid facing and fabric backing having a combined thickness of less than 0.900-inches and an areal density of no more than 5.1 pounds per square foot.

Dickson disclose metallic armor wherein a backing portion is adhered to a durable metallic facing element (abstract). The metallic armor is useful in protecting against multiple small arms bullets [0002-0004]. The formed metallic facing element has a thickness of between about 0.02-0.50 inches [0007]. The backing portion includes a fiber composite substrate with a thickness of between about 0.06 inches and about 3 inches [0008]. There may also be an adhesive layer between the metallic facing element and the backing portion having a thickness of between about 0.0005-0.90 inches [0009]. The formed metallic facing element may be formed of titanium, aluminum, and steel plates [0021]. The metallic facing element is a continuous monolithic plate that is generally flat [0043]. The backing portion includes aramid or polyethylene and M5 fibers [0050]. The fibers can be grouped together in yarn bundles [0053]. The fibers have a tenacity equal to or greater than 7 grams per denier [0055]. The adhesive layer comprises epoxies, polysulfides, polyurethanes, polyolefins, and acrylics [0064]. The areal density of the metallic facing element is no more than about 2.2 psf and the areal density of the fiber substrate/backing is about 2.8 psf [0065]. The layers of the backing were placed under pressure of 3000 psi [0069]. The combined thickness of the armor can be .0805-3.59 inches (claim 24). It would have been obvious to one having ordinary skill in the art to have used Dickson's ballistic fabric backing with Park's composite motivated by the desire to create an armor material that is lightweight yet maintains improved penetration resistance.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 5,632,288) in view of Dickson (US 2004/0216595), as applied to claim 1 above, and further in view

of Klintworth et al. (US 2003/0139108). Park and Dickson disclose the claimed invention except for the teaching that the means for adhering the rigid plate to the fabric is a polymeric film.

Klintworth et al. (US 2003/0139108) disclose hard armor panels including a ceramic tile adhered to a backing panel (abstract). The ceramic tile may be made of silicon carbide or boron carbide [0019]. The backing material comprises p-aramid (Kevlar) fibers [0020]. Preferably, the backing element is fixed to the rear surface by a film adhesive [0032], which the Examiner is equating to Applicant's polymeric film. It would have been obvious to one having ordinary skill in the art to have used Klintworth's film adhesive in place of the epoxy adhesive of Park and Dickson, motivated by the desire to create a laminate have increased lamination strength.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-7, 9, 10, 13, 15-17, and 20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ula C. Ruddock whose telephone number is 571-272-1481. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/U. C. R./

/Ula C Ruddock/  
Primary Examiner, Art Unit 1794